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The Examiner's objections/rejections to the drawings, specification and claims have been addressed above. Basis for the claims amendments can be found in the originally filed specification. The amendments made to the specification were grammatical changes. No new matter has been added to the application.

Accordingly, it is respectfully requested that the above objections/rejections to the drawings, specification and claims be withdrawn.

Arguments

Claims 1-12, 14, 15, 18-24, 26 and 27 are rejected under 35 USC 103(a) as being unpatentable over Kanjo et al '363 in view of Engle '178. The Examiner states that Kanjo et al show in figure 21 an apparatus engageable with a hand brake assembly for automatically **applying** (emphasis mine) at least one brake means secured to a railway vehicle with such hand brake assembly. The Examiner then states that this apparatus does not include the limitation of a portion of the operating means being engageable with at least one gear of a gear assembly disposed in a housing member of such hand brake assembly. The Examiner then relies upon Engle, as shown in Figure 2, for teaching the use of an operating means engageable with at least one gear 52 of a gear assembly 52, 23A, 23B for operating such gear assembly in a direction which will cause an application of such at least one brake means. The

Examiner summarizes the rejection by stating that it would have been obvious to have "constructed the operating means of Kanjo et al with a portion engageable to a gear assembly, as taught by Engle, depending on the mechanical structure of the specific hand brake with which the apparatus is engaged in order to transfer force from the operating means of the apparatus to the brake to effect a release or application of a hand brake".

The Applicant disagrees with the Examiner's position for the following reasons.

Kanjo et al is directed to an apparatus for **releasing** the hand brake of a railway vehicle, not for applying the hand brake. The Examiner's attention is directed to col. 13, lines 28-34 and col. 14, lines 1-5 and lines 63-66 of the reference. These passages state that the pneumatic cylinder 300 has a piston rod or plunger 304 which contacts a quick release lever 306. Pivoting of this lever effects the **release** (emphasis mine) of the hand brake. Kanjo et al has nothing do with an apparatus engageable with a hand brake for automatically **applying** a brake means. Furthermore, Kanjo et al fail to disclose an apparatus for applying a brake means wherein this apparatus is engageable with a gear such that the application of fluid pressure thereto would cause the automatic application of the brake.

With respect to Engle, the Examiner states that "Engle teaches in figure 2 the use of an operating means engageable with at least one gear 52 of a gear assembly 52, 23A, 23B for operating such gear assembly in a direction which will cause an application of such at

least one brake means". It is unclear what the Examiner is depending upon to teach the "operating means". Is the Examiner equating the hand wheel mechanism to the "operating means"? If such is the case, it is unclear what "gear" this hand wheel mechanism is engageable with as the hand wheel mechanism is used for winding chain 23A and 23B. It is not engageable with a gear, let alone a gear within a gear assembly disposed in a housing member of a hand brake assembly.

With respect to the combination of Kanjo et al with Engle, it is the Examiner's position that it would have been obvious to position the operating means of Kanjo et al such that it engages a gear as taught by Engle. It is unclear to Applicant what "gear" in Kanjo et al the operating means should engage. Kanjo et al specifically teaches the operating means contacting a release lever for releasing the brakes. Kanjo et al does not teach a gear. Furthermore, if one were to replace the hand wheel in the Engle device with the operating means of Kanjo et al, then such would destroy the operation of the Engle hand brake assembly because the operating means would be applying a downward force to a chain, not a gear. This would have no effect on the hand brake because Engle requires that the chain be wound in order to apply the hand brake.

In view of the above arguments, it is respectfully requested that the rejection of claims 1-12, 14, 15, 18-24, 26 and 27 under 35 USC 103(a) over Kanjo et al '363 and Engle '178 be withdrawn.

Claims 16 and 28 are rejected under 35 USC 103(a) over Kanjo et al '363 and Engle '178 and further in view of WIPO 98/28174. The

Examiner relies upon the WIPO reference as showing an overload protection means. The same arguments stated above with respect to Kanjo et al and Engle are applicable against this rejection. The WIPO reference fails to overcome the deficiencies of the Kanjo et al/Engle combination.

Accordingly, it is respectfully requested that the rejection of claims 16 and 28 under 35 USC 103(a) over Kanjo et al '363, Engle '178 and WIPO 98/28174 be withdrawn.

Claims 17 and 29 are rejected under 35 USC 103(a) over Kanjo et al '363 and Engle '178 and further in view of Budzich. The Examiner relies upon Budzich as showing a slip clutch. The same arguments stated above with respect to Kanjo et al and Engle are applicable against this rejection. The Budzich reference fails to overcome the deficiencies of the Kanjo et al/Engle combination.

Accordingly, it is respectfully requested that the rejection of claims 17 and 29 under 35 USC 103(a) over Kanjo et al '363, Engle '178 and WIPO 98/28174 be withdrawn.

Claims 13 and 25 are rejected under 35 USC 103(a) over Kanjo et al '363 and Engle '178 and further in view of Newman, II et al. The Examiner relies upon the Newman, II et al reference as showing a push button. The same arguments stated above with respect to Kanjo et al and Engle are applicable against this rejection. The WIPO reference fails to overcome the deficiencies of the Kanjo et al/Engle combination.

Accordingly, it is respectfully requested that the rejection of claims 13 and 25 under 35 USC 103(a) over Kanjo et al '363, Engle '178 and Newman, II et al be withdrawn.

Claim 30 is rejected under 35 USC 103(a) as being unpatentable over Barefoot in view of Kanjo et al '363. It is the Examiner's position that Barefoot teaches an apparatus for automatically applying a brake means secured to a railway vehicle but fails to teach the apparatus being associated with a hand brake assembly. The Examiner relies upon Kanjo et al '363 to overcome the deficiencies of Barefoot stating that it would have been obvious to have utilized the automatic braking apparatus of Barefoot in a railway hand brake assembly, as taught by Kanjo et al, in order to effect automatic braking of a railway hand brake.

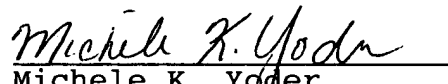
The Applicant disagrees with this rejection as Kanjo et al is directed to releasing the hand brake, not applying it. Furthermore, Kanjo et al shows an operating means which contacts a release lever, not a gear. Thus, it is unclear where on the hand brake one would locate the automatic application apparatus of Barefoot.

In view of the above arguments, it is respectfully requested that the rejection of claim 30 under 35 USC 103(a) over Barefoot in view of Kanjo et al '363 be withdrawn.

Conclusion

In view of the foregoing arguments and amendments, Applicant believes that the application meets all applicable statutory and regulatory requirements. Accordingly, Applicant respectfully request allowance of all claims remaining in the application. If the Examiner has any questions regarding this amendment and/or believes that a telephone interview would assist in the advancement of this case to allowance, he/she is invited to contact the undersigned Agent for Applicant.

Respectfully submitted,


Michele K. Yoder
Reg. No. 41,562
Agent for applicant

James Ray & Associates
2640 Pitcairn Rd.
Monroeville, Pa. 15146-3309

Telephone (412) 380-0725
Facsimile (412) 380-0748

Appendix A

Mark d-up copy of changes made to specification:

Please amend the paragraph bridging pages 7-8 of the specification as follows:

-- A still further object of the present invention is to provide an apparatus engageable with a hand brake assembly on a railway vehicle which will substantially minimize the possibility of an operator improperly setting the hand brake by not applying enough torque thereby leaving such railway vehicle somewhat free to cause serious damage and/or possible injury to railroad personnel or, on the other hand, applying [to] too much torque thereby possibly damaging the brake rigging of such hand brake.--

Please amend the paragraph bridging pages 15-16 and the paragraph bridging pages 16-17 of the specification as follows:

-- In the embodiments of the invention described above, it is expected that the capacity of the reservoir 18 should generally be in the range of between about 400 cubic inches and about 1,400 cubic inches. Preferably, such reservoir 18 will have a capacity of between about 400 cubic inches and above 700 cubic inches. It may be possible to use a smaller reservoir 18 because it is relatively easy to work valve 52 initially and the cam system 54 is going to increase the system efficiency, therefore, it will not

require as much air in such reservoir 18. In other words, 700 cubic inches may be the worst case scenario based on the assumption that a 90 psi system is being used and the total amount of energy [that we apply] applied assumes every stroke of the cylinder went to full pressure in each stroke. Obviously, when [you start] one starts winding the chain (not shown) [you're not going to] one will not need full pressure on the cylinder because it's going to be easy to wind up. Therefore, the cam 54 is going to cause it to reciprocate and return without reaching full pressure so it should not require a significant amount of air pressure.

For example, assume [we've got] one has a charged reservoir 18 and everything is settling into a steady state where the cylinder piston 32 is completely returned by it's spring 34. Consequently, there is no air pressure behind the piston 32, and to start an application all that is required is to push the push button 44 attached to valve member 56 which begins the whole process. It allows air into reservoir 58. Reservoir 58 may or may not be a physical reservoir in the circuit. It could be, for example, a volume of the pipe. In any case, it allows air to pass from reservoir 18 into reservoir 58 which then operates (2) pilot operator valves 62 and 64. This moves valve 62 into the connected position and valve 64 is moved to a vented position. There is a direct connection 66 from the 700 cubic inch reservoir 18 which passes through the valve 64 to the timing reservoir 22. In this manner, the timing reservoir 22 is charged prior to starting. There are two power operated valves 68 and 72 which are shifted.

Valve 72 is in the closed position to start with and valve 68 is in the connected position.--

Please amend the paragraph bridging pages 15-16 and the paragraph bridging pages 18-19 of the specification as follows:

-- With push button 44 activated, valve 56 connects the 700 cubic inch reservoir 18 to reservoir 58 which causes valves 62 and 64 to shift. Now valve 64 starts reducing the pressure. The valve member 62 connects the 700 cubic inch reservoir 18 through to valve member 52. Valve member 52 is hooked to the reciprocating cam 54. When the piston 32 is in the home position it will be connected as shown in Figure 6, which means it's passing through the valve 68. Since there is pressure in the timing reservoir 22, the valve 68 will, also, be shifted to the right hand side and connected behind the piston 32. Now there is a complete path with the reservoir 18 through valve 62 and through valve 52 and through valve 68 to the back side of the piston 32. With air flowing through the back side of the piston 32, the piston 32 is now driving the rack 74 down into the main drive gear 37 and causing the hand brake 20 to wind up. Once the piston 32 reaches the bottom of its stroke it's going to pick up a pin on cam 54 and the valve shifting mechanism is going to cause valve 52 to reciprocate. This will cause the valve member 52 to shift to a different position. Valve member 52 will then vent the air in the cylinder and the spring 34 is going to push the air back out of the cylinder or to atmosphere. When it

gets almost to the top of its stroke, the cam 54 is going to pick-up again and shift valve 52 in the other direction, which is going to cause air to go back in the cylinder again. The apparatus 10 will continue this cycle until it gets the hand brake 20 completely wound up. It will require different amounts of air pressure in the cylinder to apply the brake at different stages of chain wind up. At the beginning of the application process it is going to be relatively easy, the pressure needed to extend the piston 32 will be rather low. The piston 32 is going to extend until it hits the cam and then the piston 32 is going to retract. The following strokes will require more and more pressure because the chain will become tighter and tighter. On the last stroke, the design of the gets almost to the top of its stroke, the cam 54 is going to pick-up again and shift valve 52 in the other direction, which is going to cause air to go back in the cylinder again. The apparatus 10 will continue this cycle until it gets the hand brake 20 completely wound up. It will require different amounts of air pressure in the cylinder to apply the brake at different stages of chain wind up. At the beginning of the application process it is going to be relatively easy, the pressure needed to extend the piston 32 will be rather low. The piston 32 is going to extend until it hits the cam and then the piston 32 is going to retract. The following strokes will require more and more pressure because the chain will become tighter and tighter. On the last stroke, the design of the system is to be no less than 40 psi starting from 90 psi, the initial condition, in a 700 cubic inch reservoir. This will ensure

that with the size of [our cylinder] the cylinder, the 40 psi will give enough input force into the rack in combination with the gear advantage. In the drawings, there is a pair of gears shown connected. Such gear advantage being achieved by a large main drive gear and a little drive gear that will provide a $4\frac{1}{2}$ to 1 mechanical advantage in order to get the chain moving. So as long as there is 40 psi, a full load will be exerted on the chain.--

Appendix B

Marked-up changes to claims 1, 3, 5, 9, 18, 20, 22 and 30.

1. An apparatus engageable with a hand brake assembly for automatically applying at least one brake means secured to a railway vehicle with [such] said hand brake assembly, said apparatus comprising:

(a) an operating means having at least a portion thereof engageable with at least one gear of a gear assembly disposed in a housing member of [such] said hand brake assembly for operating [such] said gear assembly in a direction which will cause an application of [such] said at least one brake means;

(b) a source of fluid pressure connected to said operating means for periodically supplying a predetermined pressure to said operating means at least sufficient to cause such application of [such] said at least one brake means; and

(c) a means connected to said source of fluid pressure for initiating [said] a supply of said predetermined pressure to said operating means thereby causing an automatic application of [such] said at least one brake means by [such] said hand brake assembly.

3. An apparatus for automatically applying at least one brake means secured to a railway vehicle with a hand brake assembly, according to claim 1, wherein said apparatus further includes an overload protection means connected to one of said

source of fluid pressure and said operating means for preventing an overload on [such] said at least one brake means.

5. An apparatus for automatically applying at least one brake means secured to a railway vehicle with a hand brake assembly, according to claim 4, wherein [said operating means includes a plurality of valve means] said at least one valve means of said operating means includes a plurality of valve means for connecting said source of fluid pressure to said operating means.

9. An apparatus for automatically applying at least one brake means secured to a railway vehicle with a hand brake assembly, according to claim 8, wherein said apparatus further includes a valve shifting means, a first portion of said valve shifting means [is] being connected to said piston member and a second portion of said valve shifting means [is] being connected to at least one of said plurality of valve means.

18. An apparatus engageable with a hand brake assembly for automatically applying at least one brake means secured to a railway vehicle with [such] said hand brake assembly, said apparatus comprising:

(a) an operating means having at least a portion thereof engageable with at least one gear of a gear assembly disposed in a housing member of [such] said hand brake assembly for operating

[such] said gear assembly in a direction which will cause an application of [such] said at least one brake means;

(b) a source of fluid pressure connected to said operating means for periodically supplying a predetermined pressure to said operating means at least sufficient to cause such application of [such] said at least one brake means;

(c) a means connected to said source of fluid pressure for initiating [said] a supply of said predetermined pressure to said operating means thereby causing an automatic application of [such] said at least one brake means by [such] said hand brake assembly;

(d) a timing means connected intermediate said operating means and said source of fluid pressure for controlling said predetermined pressure being periodically supplied to said operating means; and

(e) an overload protection means connected to one of said source of fluid pressure and said operating means for preventing an overload on [such] said at least one brake means.

20. An apparatus for automatically applying at least one brake means secured to a railway vehicle with a hand brake assembly, according to claim 19, wherein [said operating means includes a plurality of valve means] said at least one valve means of said operating means includes a plurality of valve means for connecting said source of fluid pressure to said operating means.

22. An apparatus for automatically applying at least one brake means secured to a railway vehicle with a hand brake assembly, according to claim 21, wherein said apparatus further includes a valve shifting means, a first portion of said valve shifting means [is] being connected to said piston member and a second portion of said valve shifting means [is] being connected to at least one of said plurality of valve means.

30. An apparatus engageable with a hand brake assembly for automatically applying at least one brake means secured to a railway vehicle with [such] said hand brake assembly, said apparatus comprising:

(a) a motor means having a rotatable shaft carrying a gear member thereon, said gear member engageable with at least one gear of a gear assembly disposed in a housing member of [such] said hand brake assembly for operating [such] said gear assembly in a direction which will cause an application of [such] said at least one brake means; and

(b) a means connected to said motor for starting said motor and thereby initiating an automatic application of [such] said at least one brake means by [such] said hand brake assembly.